

REMARKS

Claims 1, 4-7 and 9-15 are objected to because of informalities. The above amendment corrects each of the cited informalities. This objection is therefore respectfully traversed.

Claims 1, 4-7 and 9-12 inclusive remain in the present application. Claims 1, 4, 5 and 9-12 stand as rejected under 35 U.S.C. §103(a) over Garrett (US patent 3,559,373). Claims 6 and 13-15 are indicated to be allowable over the prior art and would be allowed if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The present invention relates to a method and apparatus for removing condensables from a gas stream, the method comprising the steps of: inducing the gas stream to flow at supersonic velocity through a conduit of a supersonic inertia separator and thereby causing the fluid to cool to a temperature that is below a temperature/pressure at which the condensables will begin to condense, forming separate droplets and/or particles; separating the droplets and/or particles from the gas; and collecting the gas from which the condensables have been removed, characterized in that the supersonic inertia separator is located in the vicinity of a gas production well for the separation of condensables from the natural gas stream produced through said well and wherein in step of separating the droplets a swirling motion is induced to the supersonic stream thereby causing the condensables to flow to a radially outer section of a collecting zone in the stream, followed by the subsonic or supersonic extraction of the condensables into an outlet stream from the radially outer section of the collecting zone, and wherein the swirling motion is imparted by a wing placed in the supersonic flow region.

Garrett also discloses a supersonic flow separator, but rather than a swirl being imparted to the flow, the flow is directed through a radius, and liquids then collect on the outer radius as the vapors follow the curve to a diffuser and outlet. The Examiner points to plate members 45 as causing "a swirling motion to be induced to the stream"(page 3 of Office action). Plate 45 of Garrett does not cause a swirling motion, but adjusts the opening that creates the sonic velocity. The opening created by adjustment of the member 45 is a rectangular opening. Never the less, the curved channel, 18 does force the gas around a bend. Unlike the present invention, the liquids are not swirled, but are separated because their inertia resists the flow around the bend, and they impact on the wall of the bend. This is different than the present invention, and this difference is reflected in the independent claims 1 as "the swirling motion is imparted by a wing placed in the supersonic flow region", and in claim 7, a swirl imparting zone is required. Among other differences between the present invention and Garrett is the absence of this wing and the swirl imparting zone in the apparatus of Garrett.

The plate 45 is not a wing, but a part of an adjustable throat assembly. Garrett would not function as intended if plate 45 imparted a swirl because such a swirl would move take liquid droplets around the outside diameter of the channel 18, and not to the outer curve of the radius where the liquids are intended to be extracted.

A prima facie basis for the rejection under 35 U.S.C. §103(a) is therefore not provided by Garrett. This rejection is therefore respectfully traversed and withdrawal thereof is respectfully requested.

Each of the rejections being traversed, allowance of the present claims is respectfully requested. If the Examiner would like to speak with applicant's representative, please feel free to contact Del Christensen at (713) 241-3997.

Respectfully submitted,

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